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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,746	04/09/2004	Erhard Bracher	32478-202238	8803

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EXAMINER

MILLER, ROSE MARY

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 12/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/820,746	BRACHER ET AL.	
	Examiner	Art Unit	
	Rose M. Miller	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-12 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3-4 and 9- 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3-4 are rejected as being indefinite. Claims 3 and 4 further limit one of the alternatives for the ultrasonic head listed in Claim 1, from which they depend. However, the claims are indefinite as they fail to limit the other selection provided in Claim 1. A suggestion for correction is to qualify claims 3 and 4 by starting the claim with the phrase --wherein the ultrasonic head is ... -- and provide the selected ultrasonic head. This will overcome the problem presented when the opposite ultrasonic head is selected.

Claim 9 is rejected as being indefinite. Claim 9 recites the phrase "the ultrasonic head or the ultrasonic heads". There is no support in claim 1, from which claim 9 depends, for multiple ultrasonic heads. Furthermore, the use of the phrase "is (are)" is misleading and confusing, as one cannot determine exactly what the claim is stating. Claim 9 would also benefit from the suggestion for Claims 3 and 4 above. By qualifying which ultrasonic head has been selected (and therefore is being further limited) one of ordinary skill can determine the full scope of the claimed invention.

Claims 10-12 are rejected as being indefinite. Claims 10-12 are method claims that do not set forth any positive methods steps to indicate that which is being performed. Furthermore, it appears the claims are reciting a particular apparatus instead of a method of using the apparatus. Correction is necessary to fully determine the scope of the claimed invention.

Art Unit: 2856

Claim 10 is further rejected as being indefinite as the use of the phrase "is (are)" is misleading and confusing, as one cannot determine exactly what the claim is stating. Therefore, the full scope of the claimed invention cannot be determined.

Claim 12 is further rejected as the phrase "one or several of the following measures are realized" is indefinite. The claim as it now stands does not adequately define the scope of the claimed invention, as there are too many variables and combinations that can result from the claim as it is now written. A suggestion is to break Claim 12 up into multiple claims that reflect a single item or just a couple of alternatives within the claim. This would enable one of ordinary skill in the art to adequately determine the scope of Applicant's claimed invention.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 5, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Takada et al. (US 6,266,983 B1)**.

Takada et al. discloses a device for measuring at least one parameter of a strip in a water bath characterized in that the strip is guided with one of its flat sides essentially perpendicular across and ultrasonic head arranged in the water bath (see Figure 4) and the ultrasonic head is a stationary ultrasonic element row that extends crosswise to the longitudinal direction of the strip (see Figure 4).

With regards to claim 1, **Takada et al.** discloses the claimed invention with the exception of the strip being tested being a flat conductor cable. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the system of **Takada et al.** to test a flat conductor cable instead of the steel strip disclosed as the system of **Takada et al.** works equally well with any strip which can be placed in a water bath. Therefore, one of ordinary skill in the art would know that a flat conductor cable could be tested by the system of **Takada et al.**

With regards to claim 2, **Takada et al.** clearly discloses the ultrasonic head comprising and ultrasonic transducer.

Art Unit: 2856

With regards to claim 3, **Takada et al.** clearly discloses in Figure 4 the ultrasonic head being a pure ultrasonic transmitter to which an ultrasonic receiver is assigned on the opposite flat side of the strip under test.

With regards to claim 5, **Takada et al.** discloses the strip being guided (by the rollers) with its flat side across the ultrasonic head either making contact with it or being at a short distance thereto (see Figure 4).

With regards to claim 10, **Takada et al.** discloses a device for measuring at least one parameter of a strip in a water bath characterized in that the strip is guided with one of its flat sides essentially perpendicular across and ultrasonic head arranged in the water bath (see Figure 4) and the ultrasonic head is a stationary ultrasonic element row that extends crosswise to the longitudinal direction of the strip (see Figure 4) and the parameter to be measured is determined with the aid of one or several reflected ultrasonic echoes (see Figure 7A).

Takada et al. discloses the claimed invention with the exception of the strip being tested being a flat conductor cable. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the system of **Takada et al.** to test a flat conductor cable instead of the steel strip disclosed as the system of **Takada et al.** works equally well with any strip which can be placed in a water bath. Therefore, one of ordinary skill in the art would know that a flat conductor cable could be tested by the system of **Takada et al.**

With regards to claim 12, **Takada et al.** clearly discloses in Figure 4 the ultrasonic head being a pure ultrasonic transmitter to which an ultrasonic receiver is assigned on the opposite flat side of the strip under test.

6. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Takada et al.** as applied to claims 1 and 10, respectively, above, and further in view of **Ichikawa et al. (US 4,893,510)**.

With regards to claim 4, **Takada et al.** discloses the claimed invention with the exception of the displaceable ultrasonic head being provided with a position sensor. **Takada et al.** discloses at column 2 lines 40-45 utilizing an ultrasonic head, which is scanned in a direction substantially at right angles to the carrying direction of the sheet with ultrasonic probes arranged in the width direction of the strip. **Ichikawa et al.** teaches moving that ultrasonic head with a scanner for the purposes of testing the moving strip. It is inherent in the use of a scanner to provide the scanner with a position sensor such that the location of any defects within the strip

Art Unit: 2856

can be easily located. **Ichikawa et al.** teaches such at column 10 line 45. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the system of **Takada et al.** with the scanning ultrasonic head disclosed and including a position sensor to determine the location of the ultrasonic head as one of ordinary skill in the art would want to be able to accurately determine the location of any faults within the tested strip in order to maximize the usage of the tested strip.

With regards to claim 11, **Takada et al.** discloses the claimed invention with the exception of the reflected ultrasonic echo being evaluated as an A-scan or an amplitude image and being displayed as a function of the transverse direction of the strip. It is known throughout the art of ultrasonic measuring and testing to take reflected ultrasonic echoes and construct an image of the object being tested from the received echoes. **Ichikawa et al.** discloses producing a display to indicate an abnormality in the strip under test. It would have been obvious to one of ordinary skill in the art at the time the invention was made to make that display an image of the discontinuity and its location as such would allow an operator to better correct or fix the problems located by the ultrasonic testing head.

7. Claim 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Takada et al.** as applied to claim 1 above, and further in view of **Tompos et al. (US 3,332,279)**.

With regards to claim 8, **Takada et al.** discloses the claimed invention with the exception of specifically providing an additional measuring device for detecting or measuring one side edge or both side edges of the strip under test. It is known throughout the art of ultrasonic strip testing that in order to perform a complete test of the strip, the location of the edge of the strip must first be determined. **Takada et al.** provides for this by having the array of transducers be wider than the strip being tested (see Figure 4). **Tompos et al.** discloses using an optical sensor to detect the edge of the strip being tested. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the system of **Takada et al.** with an additional sensor for testing the edge of the moving strip as the system of **Tompos et al.** teaches that by determining the edge of the moving strip, an indication of the location of any defects found within the moving strip can be relayed to one who can fix the problems and/or defects.

With regards to claim 9, **Takada et al.** discloses the claimed invention with the exception of the ultrasonic head being on a displaceable slide. **Tompos et al.** teaches that the use of a

Art Unit: 2856

displaceable slide allows for one of ordinary skill in the art to test the moving strip by utilizing fewer transducers and therefore fewer connections while still covering the whole moving strip. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Takada et al.** to include the displaceable slide in the system disclosed as taught by **Tompos et al.** in order to reduce the number of ultrasonic transducers found within the ultrasonic testing head.

Allowable Subject Matter

8. Claims 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach and/or suggest a device for measuring at least one parameter of an extruded flat conductor cable in a water bath that follows the extruder, characterized in that, in combination with the other recited elements, the device is provided with a guiding device that comprises an interior space, is located inside the water bath and is filled with water, the guiding device being provided with a slot, the flat conductor cable being guided across the slot so as to make contact or at a short distance thereto and that the slot extends crosswise to the longitudinal direction and the ultrasonic head is arranged inside the interior space of the guiding device and transmits ultrasonic waves in the direction of the slot.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Davies (US 3,910,104) discloses an apparatus and method for ultrasonic testing of a steel plate.

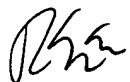
Nusbickel, Jr. et al. (US 4,375,167) discloses an ultrasonic transducer suspension system for on-line high speed ultrasonic inspection of flat rolled products.

Art Unit: 2856

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rose M. Miller whose telephone number is 571-272-2199. The examiner can normally be reached on Monday - Friday, 7:30 am to 3:30 pm.

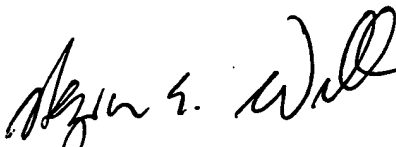
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



RMM

7 December 2005



HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
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